

**Table S1.** Semi-quantitative macroscopic score for the samples evaluation  
(24 = normal; 0 = worst healing)

\*Smooth, white, indistinguishable from normal healthy cartilage.

Categories	Description		Score
Surface	Percent area of defect filled (%Fd)	100%	3
		>75%	2
		50-75%	1
		<50%	0
	Tissue aspect (S1)	Normal: smooth, white*	3
		>75% normal	2
		50-75% normal	1
		<50% normal	0
	Regularity (S2)	Regular, intact	4
		Breaks (fracture)	3
		Clefts (fissure)	2
		Small cavities	1
		Great cavities	0
	Graft-recipient tissue integration (Grti)	100% of perimeter	3
		>75%	2
		50-75%	1
<50%		0	
Section aspect	Depth (Sct1)	At host cartilage level	3
		At host subchondral bone level (eburneation)	2
		Just underneath bone plate surface	1
		Deepened in the subchondral bone	0
	Tissue aspect (Sct2)	Similar to bone and cartilage	2
		Granulation tissue	1
		Only bone (eburneation)	0
	Subchondral cysts (Sct3)	None	3
		Mild	2
		Moderate	1
		severe	0
	Periarticular remodelling (Sct4)	None or no pertinent	3
		Mild	2
		Moderate	1
		severe	0

**Table S2.** Semi-quantitative histological score for the samples evaluation.  
(62 = maximum score; 0 = minimum score)

Categories		Grading scale	Score	
Cartilage	Surface regularity (C1)	Regular	1	
		Irregular	0	
	Cell type (C2)	Chondroblasts-cytes	4	
		Both chondroblasts and fibroblasts	3	
		Fibroblasts	2	
		Fibroblasts and endothelial cells	1	
		Empty	0	
	Tissue type (C3)	Mature hyaline cartilage	5	
		Immature hyaline cartilage	4	
		Fibrocartilage	3	
		Fibrous tissue	2	
		Granulation tissue	1	
	Bone	Ossification (B1)	Empty	0
			Lamellar bone	3
			Woven bone	2
Subchondral ossification			1	
Absence			0	
Cell Type (B2)		Osteogenic cells	6	
		Osteoblasts/chondroblasts	5	
		Chondroblasts/cytes	4	
		Chondroblasts/ fibroblasts	3	
		Fibroblasts	2	
Morphology		Filling of defect (Fd)	Fibroblasts and endothelial cells	1
			Empty	0
			Complete	2
		Edges of defect (Edg) <i>Continuity of articular cartilage edge and filling material</i>	Partial	1
			None	0
	2 edges , both completes		5	
	2 edges, one complete		4	
	2 edges, both incompletes		3	
	Integration between cartilage and bone plate (Int)	1 edge complete	2	
		1 edge incomplete	1	
None		0		
Tidemark (Tdk)	yes	2		
	partial	1		
	no	0		
	Presence (complete)	2		
	Presence (intermitted)	1		
Vascularity	Amount (V1)	Premature/Absence	0	
		None	3	
		Low	2	
	Distribution (V2)	Medium	1	
		High	0	
		Absence	4	
		Above level of tidemark	3	
Distribution (V2)	Upper half of defect below tidemark	2		
	Lower half of defect below tidemark	1		
	Entire	0		

Degeneration	Degree of articular deterioration (D1)	None	3
		Mild	2
		Moderate	1
		Severe	0
	Subchondral bone sclerosis (D2)	None or not pertinent	3
		Mild	2
		Moderate	1
		Severe	0
	Periarticular remodeling or lipping (D3)	None or no pertinent	3
		Grade I (Mild)	2
		Grade II (Moderate)	1
		Grade III (Severe)	0
	Subchondral bone cysts (D4)	None	3
		Mild	2
		Moderate	1
		Severe	0
Inflammation (Inf)	None	3	
	Grade I (Mild)	2	
	Grade II (Moderate)	1	
	Grade III (Severe)	0	
Matrix staining	Collagen staining with Azan-Mallory (Ms1)	Marked	3
		Moderate	2
		Mild	1
		Premature	0
	Proteoglycan staining with Safranin-O (Ms2)	Marked	4
		Moderate	3
		Mild	2
		Initial production	1
		Premature/Negative	0
	Collagen type II immunostaining (Ms3)	Marked	3
		Moderate	2
Mild		1	
Premature/Negative		0	